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February 3, 2004

Mr. Arthur Bourlard
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US EPA RECORDS CENTER REGION 5



**Subject: Electrical Resistance Heating Status Report
The Lockformer Company, Lisle, IL**

Dear Mr. Bourlard:

The purpose of this letter report is to present a brief description of the electrical resistance heating (ERH) operational activities for the period from **January 26, 2004** to **February 2, 2004**. The field activities, ERH system results, and planned work are presented in the following sections.

ERH Field Activities

During the week of January 26, 2004 TRS was on-site to continue operations of the ERH system. ERH system operational data were collected and adjustments made to optimize the effectiveness of the ERH system in the localized areas above the clean-up goals. Due to the extremely low temperatures during this period and the week prior, several frozen drip lines were found. TRS attempted to thaw the frozen lines, however due to the below normal temperatures most lines remained frozen causing limitations on the quantity of water applied to the subsurface.

Confirmational soil sampling continued in Areas 1G and 1H during the week of January 26, 2004. During the confirmational soil sampling in sub-areas 1G and 1H and data analysis period, the ERH system will continue to operate in areas that have not reached the clean-up objectives and/or areas that sample analysis has not been reported, during times when sampling is not being performed.

The voltage applied from January 26, 2004 to February 2, 2004 was approximately 133 volts resulting in an overall average power input of 318 KW, including downtime. The power input, not including the extensive downtime caused by confirmatory soil sampling, during this period was 402 KW. The total energy input up to February 2, 2004 was 3,279,646 KW-Hr.

The ERH system experienced the following downtime during this reporting period:

- January 27, 2004: PCU output shutdown at approximately 07:50 CST due to confirmatory soil sampling in Area 1G and 1H. Soil sampling completed and ERH output placed back on-line at approximately 16:45 CST on January 27, 2004.
- January 28, 2004: PCU output shutdown at approximately 07:05 CST due to confirmatory soil sampling in Area 1G and 1H. Soil sampling completed and ERH output placed back on-line at approximately 17:00 CST on January 28, 2004.
- January 29, 2004: PCU output shutdown at approximately 10:55 CST due to confirmatory soil sampling in Area 1G and 1H. Soil sampling completed, however due to a miscommunication the ERH output was placed back on-line at approximately 16:25 CST on January 29, 2004.
- January 30, 2004: PCU output shutdown at approximately 07:00 CST due to confirmatory soil sampling in Area 1G and 1H. Soil sampling completed and ERH output placed back on-line at 16:15 CST on January 30, 2004.

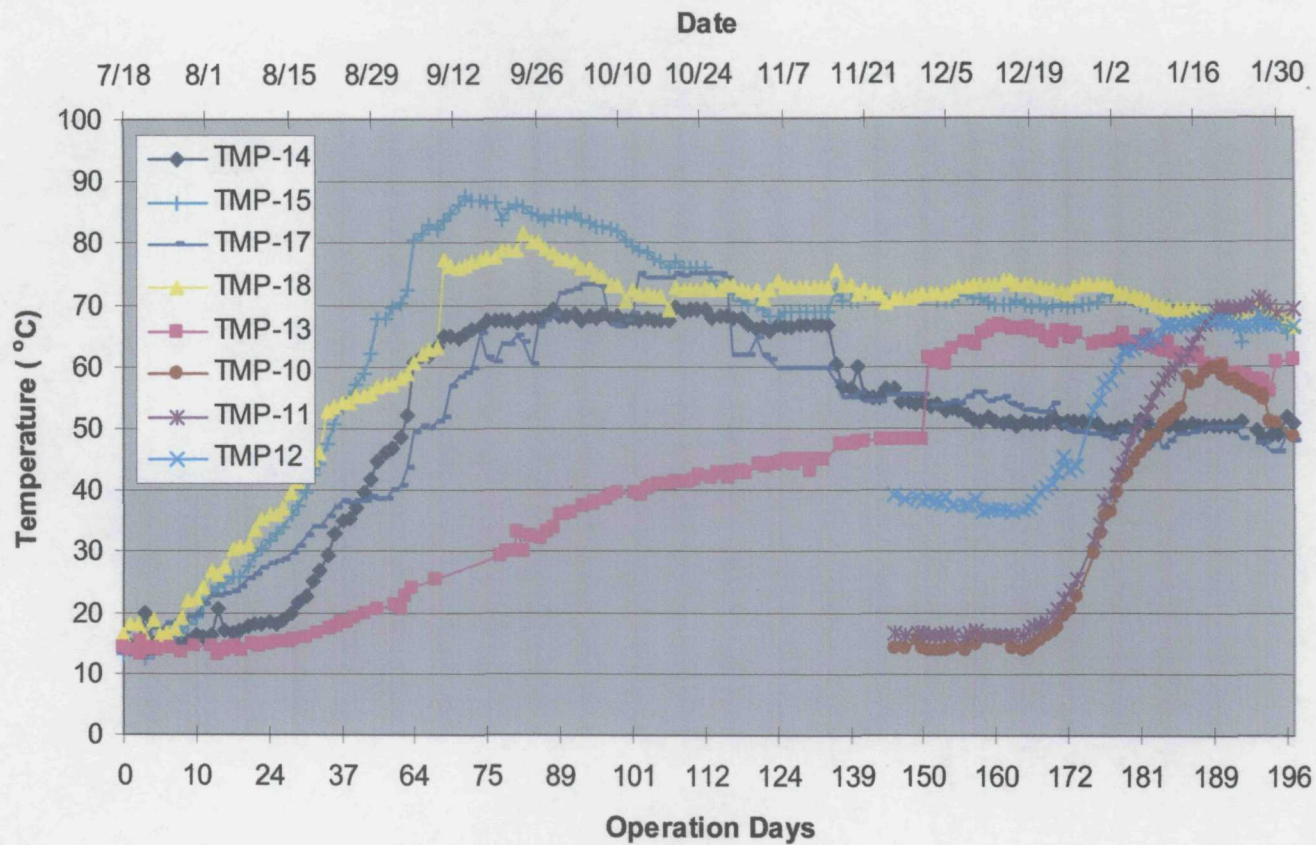
The total downtime from June 25, 2003 to February 2, 2004 has been approximately 35 days, of which approximately 13 days are attributable to either Lockformer or CGS and an additional 11 days were caused by confirmatory soil sampling in Area 1 and Area 2.

ERH System Results

Temperatures

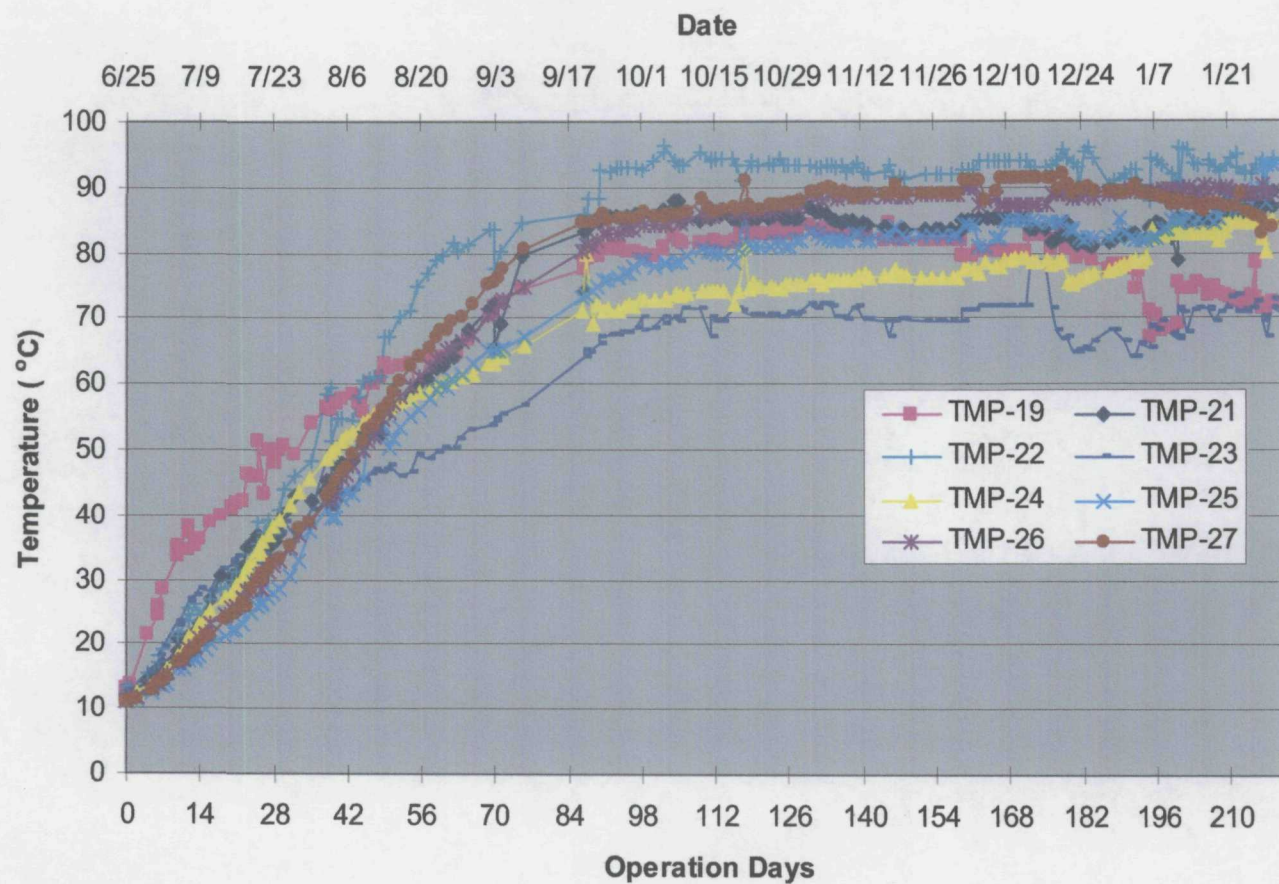
The subsurface temperature in Area 1 dropped approximately 2°C over this reporting period presumably due to "dry out" in this area. The drip will continue to be adjusted in this area to provide water to the subsurface. The average subsurface temperature in Area 2 remained unchanged overall, but increased approximately 2°C in Area 2B and 1°C in Area 2C where remedial efforts are being concentrated.

GRAPH 1
AREA 1 AVERAGE TEMPERATURES



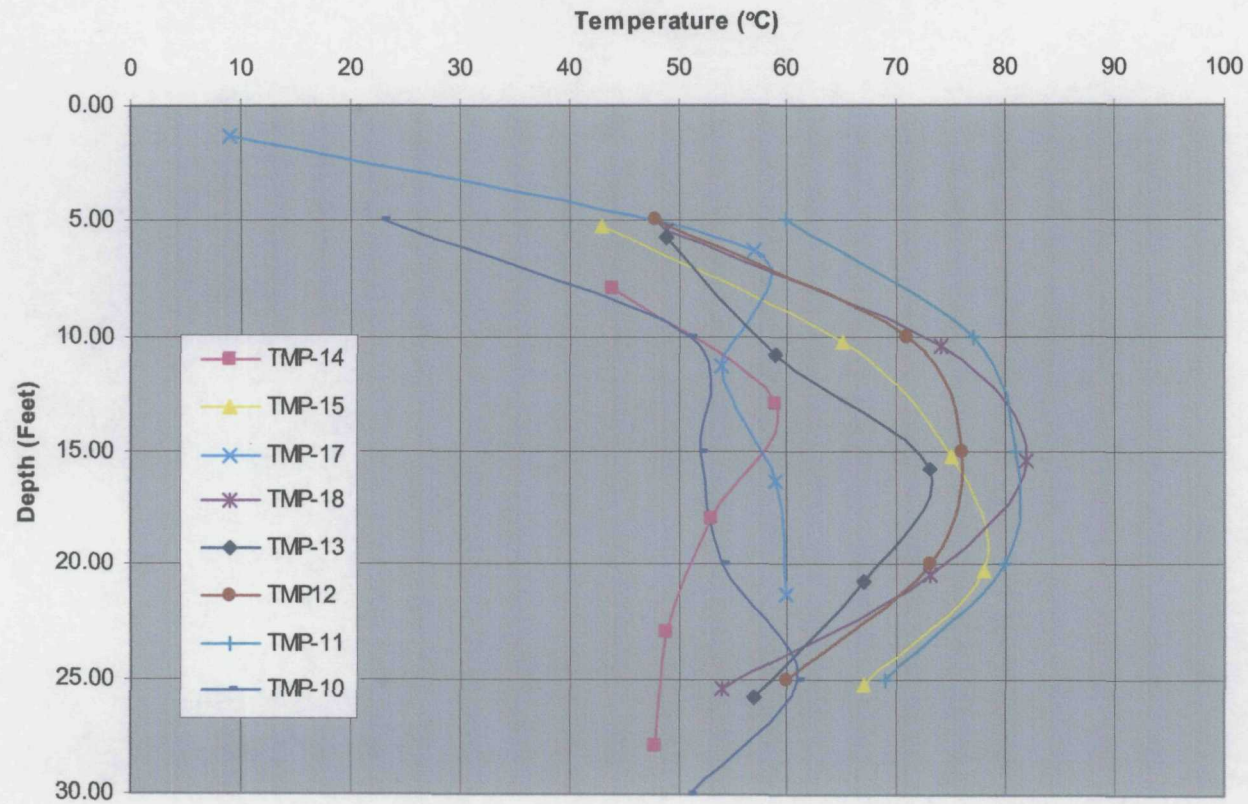
Graph 1 below is the calculated average temperature versus time in Areas 1D, 1E, 1F, 1G, and 1H as of February 2, 2004.

GRAPH 2
AREA 2 AVERAGE TEMPERATURES



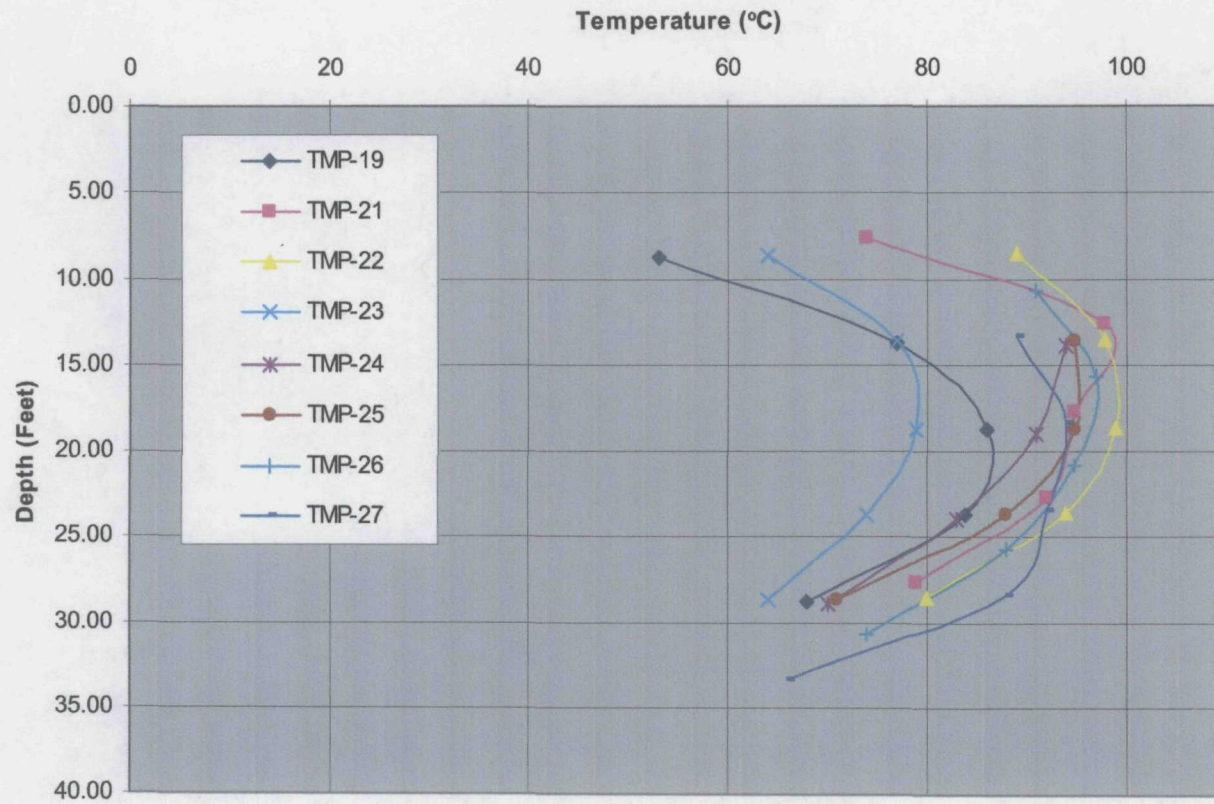
Graph 2 below is the calculated average temperature versus time in Area 2 as of February 2, 2004.

GRAPH 3
AREA 1 TEMPERATURE VS. DEPTH



Graph 3 below represents the temperature-versus-depth for TMP-10, TMP-11, TMP-12, TMP-13, TMP-14, TMP-15, TMP-17, and TMP-18 in Areas 1D, 1E, 1F, 1G, and 1H on February 2, 2004.

GRAPH 4
AREA 2 TEMPERATURE VS. DEPTH

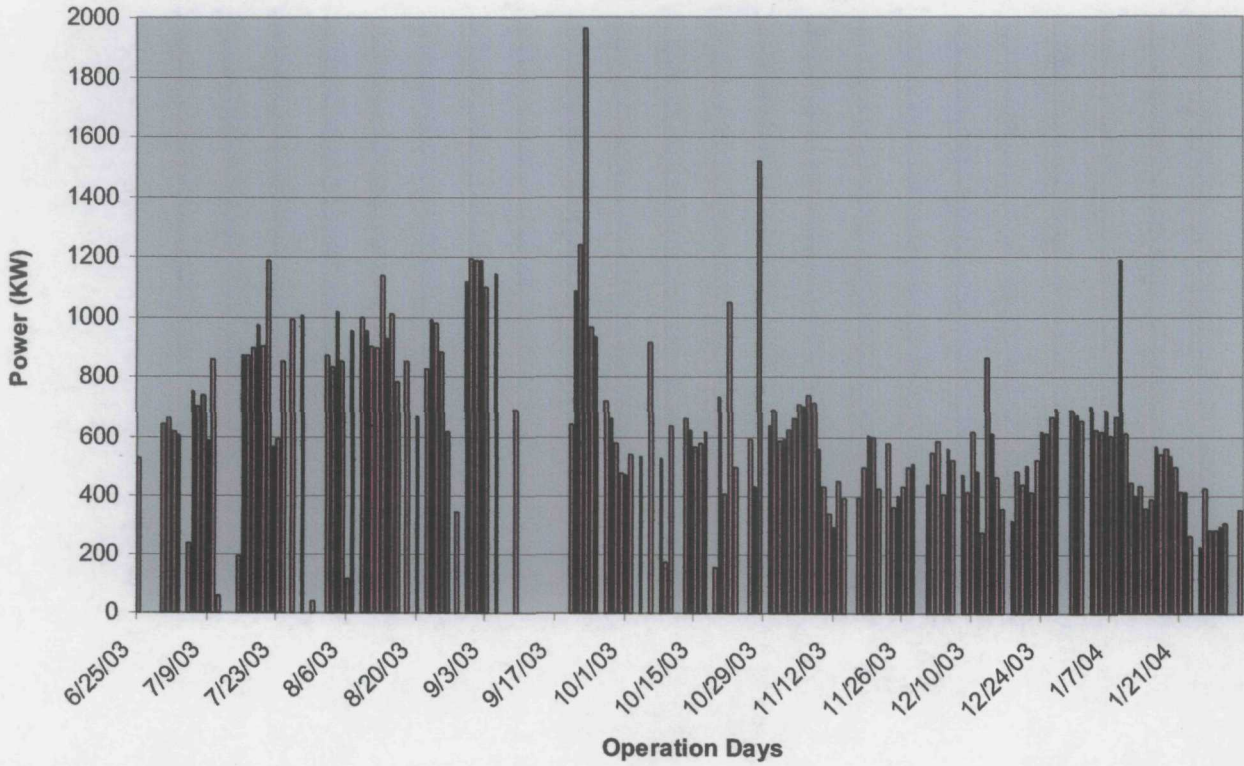


Graph 4 below represents the temperature-versus-depth for TMP-19, TMP-21, TMP-22, TMP-23, TMP-24, TMP-25, TMP-26, and TMP-27 in Area 2 on February 2, 2003.

Power

The three operational phases of the Power Control Unit averaged 318 kilowatts of power input from January 26, 2004 to February 2, 2004, including downtime. The power input, not including the extensive downtime caused by confirmatory soil sampling, during this period was 402 KW. A total of 3,279,646 kilowatt-hrs of energy have been input to the subsurface at the site as of Monday, February 2, 2004. Graph 5 below represents the average power input rate over the life of the project.

**GRAPH 5
AVERAGE POWER INPUT**



ERH System Vacuum and Flow

The vacuum data collected from the ERH extraction system is presented in the following tables. All values are in inches of water vacuum unless otherwise indicated.

[illegible]

Date: Electrode	1/6/04	1/9/04	1/12/04	1/15/04	1/16/04	1/22/04	1/28/04
AREA 1							
G16	>30	NT	>30	>30	>30	NT	>30
P15	18	17	16	16	16	17	16
L15	>30	27.5	5.5	5.5	2.2	3	2
O15	6.5	4	3.5	3.5	2.8	3.5	3
N16	NT	3	2	2	1.6	5	2
M14	7	4	3.5	3.5	2.6	4	3.5
N13	>30	16	15	15	16	27	30
J12	NT	0	>30	>30	>30	1.5	0
L13	>30	>30	>30	>30	>30	>30	>30
K11	>30	>30	>30	>30	>30	34	>30
K14	>30	>30	>30	>30	>30	48	>30
L16	NT	3.5	3.5	3.5	4	7	7
K15	6.5	5	3.5	3.5	1.6	5	6
K12	NT	0	15	15	>30	0	0
J13	5	>30	>30	>30	>30	41	>30
L14	2	2	2	2	1	3.5	1
J11	>30	>30	>30	>30	>30	48	>30
L12	NT	2.5	4	4	0	2	2
K13	0	23.5	19	19	19	13	3
M11	>30	NT	>30	>30	>30	48	>30
M12	>30	>30	>30	>30	>30	27	25
O13	NT	>30	>30	>30	>30	48	NT
L10	>30	NT	>30	>30	>30	34	>30
N11	>30	NT	>30	>30	>30	48	>30
O11	>30	NT	>30	>30	>30	48	>30
N12	>30	0	>30	>30	>30	34	>30
L11	>30	NT	>30	>30	>30	48	>30
M10	>30	NT	>30	>30	>30	48	>30
K9	>30	NT	>30	>30	>30	48	>30
N10	>30	NT	>30	>30	>30	48	>30
P11	0	NT	2	2	>30	48	24
O9	>30	NT	>30	>30	>30	41	5
L9	>30	NT	>30	>30	4.6	4.5	14
L8	NT	NT	NT	NT	NT	NT	NT
O8	>30	NT	>30	>30	26	19	22
P10	>30	NT	>30	>30	NT	NT	NT
N9	NT	NT	NT	NT	NT	NT	NT
M8	NT	NT	NT	NT	NT	NT	NT
N7	NT	NT	NT	NT	>30	48	3
M5	NT	NT	NT	NT	>30	54	0
L3	NT	NT	NT	NT	0	NT	NT
L4	NT	NT	NT	NT	0	NT	NT
L5	NT	NT	NT	NT	0	NT	NT
L6	NT	NT	NT	NT	4	NT	NT
L7	>30	NT	>30	>30	14	48	26
M9	>30	NT	>30	>30	NT	NT	NT
O10	>30	NT	>30	>30	>30	48	>30

Date:	1/6/04	1/9/04	1/12/04	1/15/04	1/16/04	1/22/04	1/28/04
Electrode							
AREA 1							
N8	7	NT	8	8	3.2	5.5	3
N6	NT	NT	NT	NT	0	NT	NT
K5	NT	NT	NT	NT	0	NT	NT
K4	NT	NT	NT	NT	0	NT	NT
M4	NT	NT	NT	NT	0	NT	NT
K3	NT	NT	NT	NT	0	NT	NT

Date:	1/6/04	1/7/04	1/9/04	1/12/04	1/15/04	1/16/04	1/22/04	1/28/04
Electrode								
AREA 2								
E1	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
D1	OFF	OFF	OFF	OFF	OFF	1.9	OFF	OFF
C1	OFF	OFF	OFF	OFF	OFF	0.2	OFF	OFF
C2	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
D2	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
E2	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
F2	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
G3	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
F3	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
E3	OFF	OFF	OFF	OFF	OFF	0.2	OFF	OFF
D3	OFF	OFF	OFF	OFF	OFF	1	OFF	OFF
C3	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
C4	OFF	OFF	OFF	OFF	OFF	1	OFF	OFF
D4	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
E4	OFF	OFF	OFF	OFF	OFF	1	OFF	OFF
F4	OFF	OFF	OFF	OFF	OFF	0.8	OFF	OFF
G4	OFF	OFF	OFF	OFF	OFF	1	OFF	OFF
F5	OFF	OFF	OFF	OFF	OFF	2	OFF	OFF
E5	OFF	OFF	OFF	OFF	OFF	0	OFF	OFF
D5	OFF	OFF	OFF	OFF	OFF	1	OFF	OFF
D6	OFF	OFF	OFF	OFF	OFF	1	1	1
E6	OFF	OFF	OFF	OFF	OFF	1	1	1
F6	OFF	OFF	OFF	OFF	OFF	1	1	1
F7	OFF	OFF	OFF	OFF	OFF	0.4	1	NT
E7	OFF	OFF	OFF	OFF	OFF	0	1	NT
D7	OFF	OFF	OFF	OFF	OFF	0	1	NT
C7	OFF	OFF	OFF	OFF	OFF	1.8	2	0
C8	1	NT	1.5	3	3	0.2	1.5	0.5
D8	NT	12	11.5	10.5	10.5	0.2	1	0
E8	0	5	6	6	6	0	1	0
F8	NT	2	2	2	2	0	1	0.2
G8	OFF	OFF	OFF	OFF	OFF	1	1	0.2
H9	OFF	OFF	OFF	OFF	OFF	>30	>30	>30
G9	1.5	2.5	2.5	2.5	2.5	0.2	1	0
F9	1	1.5	1.5	1	1	0.2	1	0.2
E9	NT	11.5	13	12	12	0.2	1	0

Date: Electrode	1/6/04	1/7/04	1/9/04	1/12/04	1/15/04	1/16/04	1/22/04	1/28/04
AREA 2								
D9	2	5	5.5	4.5	4.5	0	2	0
D10	3	12.5	15	14	14	0.2	1	0
E10	2	5	5.5	5.5	5.5	0	13.5	17
F10	1	9	10.5	10	10	0	1.5	1
G10	0	2.5	2.5	3	3	0.4	1	0
H10	OFF	OFF	OFF	OFF	OFF	0	1	0
F11	0	0	23.5	20.5	20.5	1.8	3	0
E11	0	21	NT	21.5	21.5	>30	>30	>30
D11	2	11.5	NT	11	11	0.8	2	1
C11	OFF	OFF	OFF	OFF	OFF	1	5	5.5
B11	OFF	OFF	OFF	OFF	OFF	0.2	1	0
A12	OFF	OFF	OFF	OFF	OFF	0	1	0
B12	OFF	OFF	OFF	OFF	OFF	0	1	0
C12	OFF	OFF	OFF	OFF	OFF	0	1	0
D12	OFF	OFF	OFF	OFF	OFF	0	1	0
E12	OFF	OFF	OFF	OFF	OFF	20	1	NT
F12	OFF	OFF	OFF	OFF	OFF	0.8	1	1
G13	OFF	OFF	OFF	OFF	OFF	0	1	0
F13	OFF	OFF	OFF	OFF	OFF	0	1	1
E13	OFF	OFF	OFF	OFF	7	5	2	1
D13	0	15	12	10	10	10.2	13	14
C13	5	7	8	7	7	6.4	8.5	9
B13	0	7.5	8.5	7	7	6	1	9
A13	OFF	OFF	OFF	OFF	OFF	0	1	0
B14	1	5	5	5	5	4.2	5	5
C14	19	8.5	8.5	8	8	7.4	8	7
D14	3	8.5	9	8.5	8.5	8	8.5	9
E14	OFF	OFF	OFF	OFF	3.5	0	1	0
F14	OFF	OFF	OFF	OFF	OFF	0	1	0
F15D	16	2	NT	4	4	0	8	0
F15S	OFF	OFF	OFF	OFF	OFF	0	1	7
E15	14	6	6.5	6	6	6.6	6.5	6
D15	3	4	4	3.5	3.5	3	4	4
C15	3.5	3.5	3.5	3	3	2	1	2
D16D	5	4	3.5	3	3	2.4	3.5	3.5
D16S	0	2	2.5	1.5	1.5	1	2	1
E16D	5	4	3.5	3.5	3.5	2.8	4	3
E16S	4.5	4	3.5	3.5	3.5	2.4	4	3
F16D	5.5	5	4	3.5	3.5	3	4	3
F16S	4.5	3.5	3.5	3.5	3.5	2.8	3.5	3
G16D	NT	5	5	3	3	4	5	4
G16S	NT	5	4.5	4.5	4.5	3.2	1	4
G17D	6.5	5	4.5	4.5	4.5	3.2	4.5	3.5
G17S	6.5	4.5	4	4	4	3	4	3.5
F17D	6.5	5	4	3.5	3.5	3	4	3.5
F17S	5.5	3.5	3	4	4	2	3	3
E17D	5.5	4.5	4	2	2	3	4	3

Date:	1/6/04	1/7/04	1/9/04	1/12/04	1/15/04	1/16/04	1/22/04	1/28/04
Electrode								
AREA 2								
E17S	NT	3	3	3	3	2	1	2
F18D	4.5	3.5	2.5	2.5	2.5	1.2	2	1.5
F18S	0	3	2.5	2	2	1.2	2	1.5
G18D	5.5	4.5	3.5	3	3	2.4	3.5	1
G18S	4	4.5	NT	2.5	2.5	2	3	2.5
G19D	OFF	OFF	OFF	OFF	OFF	0	1	0
G19S	OFF	OFF	OFF	OFF	OFF	1	1	0

The extracted vapor velocity data collected from the ERH extraction system is presented in the following tables.

AREA 1		1/14/04	1/16/04	1/22/04	1/28/04
Row	Num of Screens	Velocity (fpm)	Velocity (fpm)	Velocity (fpm)	Velocity (fpm)
6	1	NT	meter broke	NT	550
7	3	NT	meter broke	NT	1289
8	4	1250	meter broke	3350	2316
9	6	11050	meter broke	NT	2784
10	4	250	meter broke	450	914
11	7	200	meter broke	NT	262
12	5	850	meter broke	NT	400
13	6	500	meter broke	NT	222
14	5	400	meter broke	NT	748
15	6	250	meter broke	530	306
16	6	6600	6884	1500	1168
17	7	7000	6122	2200	4712
18	9	7900	1075	5500	2337
19	9	300	628	150	2647
20	9	2700	2025	100	NT

Note: Velocity meter broken during measurement of velocity on January 16, 2004.

AREA 2		1/14/04	1/16/04	1/22/04	1/28/04
Row	Num of Screens	Velocity (fpm)	Velocity (fpm)	Velocity (fpm)	Velocity (fpm)
1		Off	2470	Off	Off
2		Off	654	Off	Off
3		Off	2594	Off	Off
4		Off	842	Off	Off
5		Off	678	Off	Off
6		Off	853	500	0
7				NT	NT
8	5	3050	6320	575	772
9	5	3600	7802	825	495
10	5	2000	6120	3250	1841
11	5	3500	4554	1000	642
12	6	250	117	550	442
13	7	3600	1340	2700	1107
14	5	1100	1593	1550	2128
15	5	650	1275	540	1100
16	8	500	1810	1250	1459
17	6	200	385	325	208
18	4	250	445		274
19	2	Off	Off		NT

Note: NT = Not Taken

NA = Not Applicable

The extracted vapor photoionization detector (PID) data collected from the ERH extraction system by CGS is presented in the following tables.

ERH Subarea	Electrode Location	Vapor Extraction Screen Location	PID (PPM) Round 1	PID (PPM) Round 2	PID (PPM) 1/9/04	PID (PPM) 1/12/04	PID (PPM) 1/23/04
2A	C1	S	2.9	3.3			
	D1	S	7.5	10.4			
	E1	S	11.7	61			
	F2	S	6.4	5			
	E2	S	4.1	6.8			
	D2	S	5.2	12			
	C2	S	1.5	2.8			
	C3	S	1.5	2.5			
	D3	S	37.3	47.6			
	E3	S	7	3.1			
	F3	S	3.3	11.3			
	G3	S	1NS	1NS			
	G4	S	3.9	2.8			

ERH Subarea	Electrode Location	Vapor Extraction Screen Location	PID (PPM) Round 1	PID (PPM) Round 2	PID (PPM) 1/9/04	PID (PPM) 1/12/04	PID (PPM) 1/23/04
	F4	S	10.6	138			
	E4	S	3.2	58			
	D4	S	8.7	60.8			
	C4	S	1.8	8.7			
	D5	S	¹ NS	¹ NS			
	E5	S	¹ NS	41			
	F5	S	3	6.5			
	F6	S	8.6	63.3			
	E6	S	2.3	5.5			
	D6	S	14.8	22.6			
2B	C7	S	1.6	2.8			
	D7	S	1.5	2.8			
	E7	S	27.6	?			
	F7	S	62.8	90.9			
	G8	S	7.4	3.8			
	F8	S	2.8	1.7			
	E8	S	7.2	11.4		1.2	0.8
	D8	S	2.9	1.5			0.6
	C8	S	1.5	1.4			
	D9	S	5.9	3		0.8	4
	E9	S	1.2	1	0.1	0.7	0.8
	F9	S	1.6	8.4		0.6	
	G9	S	7.1	2.9			
	H9	S	1.3	1.4			
	H10	S	1.6	4.5			
	G10	S	1.1	0.8			
	F10	S	2.6	7.9	0.7	0.7	3.1
	E10	S	17.6	4.2	0.8	0.3	1.4
	D10	S	1	1.2	0.5	0.9	0.8
2C	B11	S	6.4	1.4			
	C11	S	1.2	6.8			
	D11	S	2	0.9		0.5	2.3
	E11	S	1	1	3.1	2.4	1.6
	F11	S	0.6	0.7			
	F12	S	3.4	1.4			
	E12	S	6.8	0.4			
	D12	S	3.6	1.9			
	C12	S	3.4	14.9			
	B12	S	2.3	0.9			
	A12	S	5.1	1.9			
	A13	S	1.9	1.4			
	B13	S	2.8	1.6	0.3	0.6	1.8

ERH Subarea	Electrode Location	Vapor Extraction Screen Location	PID (PPM) Round 1	PID (PPM) Round 2	PID (PPM) 1/9/04	PID (PPM) 1/12/04	PID (PPM) 1/23/04
	C13	S	5.8	5.6	0.8	0.7	1.9
	D13	S	2.8	3.5		0.1	0.8
	E13	S	24.5	41.4			
	F13	S	5.8	3.4			
	G13	S	2.1	1.5			
2D	F14	S	3.6	2.7			
	E14	S	57.2	6.2			
	D14	S	7.6	16.2		1	1.5
	C14	S	2.9	2.4	0	0.4	1.1
	B14	S	4.6	4		1.5	3.4
	C15	S	2.2	1.8	0.6	0.6	1.4
	D15	S	9.5	3.7	1.2	0.9	2.3
	E15	S	3.4	2.1			
	F15	D	311	26.1			
	F15	S	5.5	1.6			
	G16	D	18.9	7.8			
	G16	S	5.9	10.2			
	F16	D	4.8	12.5	3.7	1.9	40.2
	F16	S	9	8.8	5.8	6.1	3.2
	E16	D	708	178	66.5	62.3	8.4
	E16	S	50.4	2.8	5.6	3.8	7
	D16	D	33.8	7			
	D16	S	21	7			
	E17	D	² NS	?		2.6	1.8
	E17	S	1.1	4.1		1.2	1.3
	F17	D	11.4	7.6	2.1	1.9	3.6
	F17	S	4.6	10	1.1	1.4	1.1
	G17	D	² NS	115		0.8	1.2
	G17	S	4.1	2.8		0.6	0.7
	G18	D	137	8		0.6	1.1
	G18	S	3.9	9.8		0.5	0.3
	F18	D	22.5	7.9		0.6	0.8
	F18	S	4.5	1.1		0.8	0.6
	G19	D	4.1	2			
	G19	S	10.1	4			

Remediation Schedule/Recommendations

The ERH system continues to operate in areas that have not yet reached the clean-up objectives. Continuing efforts will be made to increase the applied energy to, and to ensure effective vapor capture within, the localized areas above the cleanup criteria identified during the confirmatory soil sampling.